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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NAGARAJA SUNDARESH, PRADEEP SHETTY, RAJESH RAMESH, CHANDRASHEKAR PADUBIDRI, RANGESA ARAKERE, and ANANDA HUCHAPPA SHASTRY

Appeal 2015-003092
Application 12/485,167
Technology Center 2800

Before: JAMES C. HOUSEL, AVELYN M. ROSS, and BRIAN D. RANGE, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*

DECISION ON APPEAL[1]

Appellants[2] appeal under 35 U.S.C. § 134(a) from a rejection of claims 1–18. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] In our Decision below we refer to the Specification (as amended) ("Spec.") filed June 16, 2009, the Final Office Action ("Final Act.") dated November 13, 2013, the Appeal Brief filed May 19, 2014 (Appeal Br.), the Examiner's Answer ("Ans.") dated November 12, 2014, and the Reply Brief ("Reply Br.") filed January 12, 2015.

[2] Appellants identify the real party in interest as Honeywell International Inc., the assignee of the instant application. Appeal Br. 4.

STATEMENT OF CASE

The claims are directed to a system and methods to make consumers aware of electricity usage. Spec. 1. Claims 1 and 8, reproduced below, are illustrative of the claimed subject matter:

1. An energy usage awareness system comprising:

an energy meter that measures energy usage of a building and stores the measured energy usage as a measured power magnitude that is sampled over a specified duration of time;

a memory that stores information about one or more energy using appliances within the building, the appliance information comprising:

a type of each of the energy using appliances;

a number of appliances of each type within the building;

ratings information for the one or more appliances; and

a listing of typical hours of usage during a typical day for each type of energy using appliances; and

wherein the appliance information and the listing of typical hours of usage during a typical day are entered by a user; and

a processor coupled to the energy meter and to the memory, wherein the processor infers an energy usage pattern for one or more of the energy using appliances using the measured power magnitude of the building and the appliance information.

8. An energy usage awareness method comprising:

measuring combined energy usage of a plurality of appliances within a building using a single meter;

retrieving appliance information from a memory, the appliance information comprising information about the types of appliances installed within the building, the number of appliances of each type installed within the building, ratings

information of each of the appliances, and a listing of typical usage hours of each appliance;

inferring a pattern of energy usage for each appliance using the measured energy usage, the appliance information, and the listing of typical usage hours of each appliance type; and,

providing the pattern of energy usage to a user of the appliances.

Claims Appendix at Appeal Br. 20 and 21.

REJECTIONS[3]

The Examiner maintains the following rejections:

A. Claims 8, 11, 14, and 15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Durling. Final Act. 4.

B. Claims 1, 4, and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Durling. *Id.* at 7.

C. Claims 2, 3, 5, 9, 10, 12, and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Rodenberg. *Id.* at 11.

D. Claims 7 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Golden. *Id.* at 16.

E. Claims 17 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Rodenberg and in further view of Ehlers. *Id.* at 17.

Appellants appeal the rejections of claims 1–18. Appellants argue independent claims 1, 8, and 17 (as well as dependent claim 18 together with

[3] The Examiner rejects claims 1–18 as indefinite under 35 U.S.C. §112, ¶ 2 but acknowledges withdrawal of the rejection. Ans. 2.

claim 17) but do not separately argue claims 2–7 and 9–16. Appeal Br. 3–19. We therefore focus our discussion below on claims 1, 8, and 17 (Rejections A, B and E) to resolve the issues on appeal. But, because we reverse the Examiner's rejection of independent claim 8, we also discuss Rejections C and D below.

OPINION

Rejection A — Anticipation (claims 8, 11, 14 and 15)

The Examiner rejects claim 8 (among others) as being anticipated by Durling. Final Act. 4. The Examiner finds that Durling "teaches an energy usage awareness method" having each of the steps of claim 8. *Id.* at 4–5.

Appellants present several arguments in support of their position that Durling cannot anticipate claim 8. *See e.g.*, Appeal Br. 9–15. Because we find Appellants' argument that Durling fails to teach "the number of appliances of each type installed within the building" persuasive of error, we need not address Appellants' remaining arguments.

Appellants urge that the "method of independent claim 8 . . . store[s] multiple recited information types which [are], by virtue of the recited information types, specific to the installation [site] and only available locally." Appeal Br. 11. Appellants acknowledge that claim 8 does not require user input of this stored information, but urges that claim 8 "recites input information to which the user of the appliances would have access and to which persons other than the user of the appliance would not generally have access." *Id.* at 12. In contrast, Appellants argue that Durling does not utilize information specific to the installed location or the categories of information recited in the claims. *Id.* Rather, Durling is a smart meter that

uses preprogrammed information that is "generic transition pattern data which is externally obtained and preprogrammed into the unit prior to installation and does not reflect the appliances actually present in the building except by incidental overlap." *Id.*

We find Appellants' argument persuasive of reversible error by the Examiner. Anticipation, a factual inquiry, is established where an Examiner shows that a single prior art reference describes all features of the claimed invention arranged as specified in claim, either expressly or inherently, in a manner enabling one skilled in the art to practice the embodiment without undue experimentation. *See, e.g., ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344 (Fed. Cir. 2012); *In re Gleave,* 560 F.3d 1331, 1334 (Fed. Cir. 2009) (To be anticipatory, "the reference must disclose each and every element of the claimed invention, whether it does so explicitly or inherently.").

Here, in relevant part, claim 8 requires the step of retrieving appliance information from memory where the appliance information includes, inter alia, "the *number of appliances of each type* installed *within* the building." Claims Appendix at Appeal Br. 21 (emphasis added). The system of Durling instead, "provides an *estimate* for each of the electric loads *typically* found in people's homes" as opposed to information about the appliances (and numbers of each type of appliances) *actually installed* within a building. Durling ¶ 27 (emphasis added). Therefore, and as Appellants explain, "Durling does not appear to 'know' which types of appliances are present within a building and can only assert a probability that a given building includes an appliance of a given type selected from a limited set of pre-programmed appliance types." Reply Br. 3. By way of example, "one

user building may have a pottery kiln while another may have a wood turning lathe. Yet another may not have a hot tub or dehumidifier. Accordingly, the recited appliance information detailed in the claim would be understood by one of ordinary skill in the art to be building specific and thus to be locally provided." *Id.* The Examiner's position (Ans. 7–8.) that "the claimed language does not specify the amount of items of appliances [but rather] only requires a number of appliances" together with the Figures depicting a listing of exemplary appliances, fails to establish that Durling teaches "the *number of appliances of each type* installed *within* the building." Accordingly, we cannot sustain the Examiner's rejection based on anticipation.

Rejection B — Obviousness (claims 1, 4, and 6)

The Examiner rejects claim 1, including claims depending therefrom, as obvious over Durling. Final Act. 7. The Examiner finds that Durling teaches an energy usage awareness system having an energy meter, a memory that stores appliance information, and a processor as claimed. *Id.* at 7–9. And, while Durling does not expressly teach that the appliance information is entered by a user, the Examiner finds that "[i]n order to pre-program this information [into memory,] this information [would] have to be pre-programmed by an [sic] user." *Id.* at 10. Thus, the Examiner reasons that it would have been obvious to a person of ordinary skill in the art at the time of the invention "that a user enter or pre-program appliance information and a listing of typical hours of usage for the benefit of having a profile data available for the analysis of energy consumption based on data from previous experiments." *Id.*

Appellants first argue that Durling does not teach measuring energy usage but rather teaches measuring power which "are not equivalent terms." Appeal Br. 9. "Current and voltage, as measured by Durling, suffice to measure power but not energy or energy usage" which are measured in joules per second or watts. *Id.* Appellants contend that "substitut[ing] a computation based upon the rate of energy usage (i.e., power) instead of energy usage, *per se*," would change the principle of operation of Durling. Reply Br. 5.

Appellants' argument does not convince us of reversible error in the Examiner's rejection. As the Examiner aptly explains that

> [p]ower is defined as the time rate at which energy is emitted, transferred or received. Power is measured in Watts, 1 Watt = 1 Joule/sec. Energy is defined as power derived from the utilization of physical or chemical resources; and as the capacity of a physical system to perform work. Energy is measured in Joules, 1 Joule = 1 Watt-second; *Power is the rate of doing work and is equivalent to energy consumed per unit time*. In conclusion, by measuring power, we are measuring energy, whether it is called measuring energy or measuring power.

Ans. 3 (emphasis added). Durling teaches measuring energy consumption over time, i.e., power in kilowatt-hours (kWh), as depicted in Figures 2 and 3. *See* Durling Figs. 2 and 3. Durling explains that this measured electric power signal may then be decomposed into individual constituent loads. *Id.* ¶¶ 5, 7–13. Thus, Durling teaches a meter that meets the claim language, that is, "an energy meter that measures energy usage . . . and stores the measured energy usage as a measured power magnitude that is sampled over a specified duration of time." Claims Appendix at Appeal Br. 20; *see also id.* at 22 ("wherein the measured energy is stored as discrete samples of the

total power consumed within the building at specified intervals over a specified duration of time").

Next Appellants argue that claim 1 recites "a meter (singular) that measures energy usage of a (singular) building[,]" as opposed to a plurality of buildings. Appeal Br. 11 and 17. Therefore Appellants contend that the "claims preclude the combination of meter readings from multiple types of meters/sensors . . . to derive that information in a manner not disclosed by Durling." *Id.*

Appellants' argument is not persuasive of reversible error. As the Examiner appropriately finds (Ans. 5), Durling teaches a single meter 10 that measures the energy consumption of a house or building and therefore, reads on the claims. *See e.g.*, Durling ¶¶ 7, 14, 23–24, 27–28, and Fig. 3. Moreover, we note that the article "a" or "an"—absent evidence to the contrary—means "one or more." *See, e.g., Baldwin Graphics Systems, Inc.* v. *Siebert,* 512 F.3d. 1338, 1342 (Fed. Cir. 2008) (In patent parlance, an indefinite article "a" or "an" means "one or more"). Here, neither the claims nor the specification indicate Appellants desire to depart from this general rule. *Abtox v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997). Indeed, a comparison of the claims indicates quite the opposite; where Appellants intended for "a" to denote a single element, Appellants specifically claimed *a single* meter. *Compare* Claims Appendix at Appeal Br. 21, claim 8 (reciting "a *single* meter") *with id.* at 20, claim 1 (reciting "an energy meter").

Third, Appellants assert that "Durling does not disclose the recited items of stored information of the independent claims having been input by the user of the appliances [occupant(s)] within the building." Appeal Br. 13.

Rather, Appellants contend that Durling relies upon generic, preprogrammed information that are exemplified by the appliances of Figure 1. *Id.* Thus, Appellants urge that "[t]he Examiner errs by relying upon substantially *different information* obtained from *substantially different sources*" than claimed. *Id.* at 14. Appellants also argue that "Durling disparages incurring home field installation costs at paragraph [0007] and so disparages even entry of the number of types of appliances, the types of appliances, or the number of appliances of each appliance type at the time of installation." Reply Br. 9.

We are not persuaded by Appellants' arguments. The specified "appliance information," relating to "one or more energy using appliances" stored in memory represents data that does not patentably differentiate the structure or function of the energy meter of claim 1 from Durling. The energy meter and its function of claim 1 and Durling are the same; only the quality, *i.e.*, relative specificity or accuracy of the input data differs between Durling and the instant claims. We need not give patentable weight to descriptive material absent a new and unobvious functional relationship between the descriptive material and the device. *See Ex parte Nehls,* 88 USPQ2d 1883, 1887–90 (BPAI 2008) (precedential); *see also In re Ngai,* 367 F.3d 1336, 1338 (Fed. Cir. 2004); *Ex parte Curry,* 84 USPQ2d 1272, 1274 (BPAI 2005) (informative) ("Nonfunctional descriptive material cannot render nonobvious an invention that would have otherwise been obvious."), *affd,* No. 06-1003 (Fed. Cir. 2006) (Rule 36). Thus, nonfunctional descriptive material—namely the appliance information of the claims—does not confer patentability to inventions that are otherwise obvious over the prior art.

Fourth, Appellants assert that "[t]he systems of the independent claims employ a processor coupled to an energy meter in conjunction with the *user supplied* information." Appeal Br. 14–16. Appellants criticize Durling as it does not disclose the "recited items of stored information of the independent claims having been input by the user of the appliances [occupant(s)] within the building." *Id.* at 12–13.

Appellants fail to identify error in the Examiner's rejection. Appellants' Specification does not assign any particular meaning to the term "user," much less the narrow definition Appellants' suggest—i.e., "user of the appliance" or "occupant of the building." Therefore, and as explained by the Examiner, "the user can be any user including [a] user pre-programing [sic] the meter." Ans. 14. Durling teaches that appliance information, including information from "offline experiments" that relates to the probability of appliances turning on and off, can be preprogrammed into the energy meter. Durling ¶ 46. Therefore, the Examiner reasons that "it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user enter or pre-program appliance information . . . for the benefit of having a profile data available for the analysis of energy consumption based on data from previous experiments." Ans. 16. We find no error in the Examiner's reasoning.

Lastly, Appellants contend that because "Durling matches observed transient patterns with previously determined representative transient pattern and based on the best fit assigns the power consumption observed to a *category* . . . Durling does not infer a pattern of energy usage for *each* appliance using the measured *energy* usage, the appliance information and listing of typical usage hours . . . ." Appeal Br. 15. This is due to the fact

that Durling does not use appliance information related to the "number of appliances of each type installed within the building," as claimed. *Id.* Appellants also argue that using the predetermined appliance profiles of Durling to infer what appliance types would be present, similarly changes the principle of operation of Durling as different input information would be used. Reply Br. 5. Therefore, Appellants reason that the proposed modifications cannot be made.

For the reasons discussed above, Appellants do not persuade us of reversible error because their argument objects to the nature of the appliance information used and the data input, and, as descriptive information it cannot render nonobvious that which would have otherwise been obvious over the prior art. *Nehls,* 88 USPQ2d at 1887–90; *Curry,* 84 USPQ2d at 1274.

Rejections C and D — Obviousness
(dependent claims 2, 3, 5, 9, 10, 12 and 13 and dependent claims 7 and 16)

Claims 2, 3, 5, and 7:

The Examiner rejects claims 2, 3, 5 (Rejection C), and 7 (Rejection D) as obvious over Durling in view of Rodenberg and additionally in view of Golden as applied to claim 7. Final Act. 11 and 16. These claims depend from independent claim 1. Claims Appendix at Appeal Br. 20. Appellants do not present any arguments for claims 2, 3, 5 and 7 separate from what is argued for claim 1. *See* Appeal Br. 17–18. Therefore, for the reasons discussed above (*see supra* p. 7–11), we sustain the Examiner's rejection of claims 2, 3, 5 and 7.

Claims 9, 10, 12, 13 and 16:

The Examiner rejects claims 9, 10, 12, 13 (Rejection C), and 16 (Rejection D) as obvious over Durling in view of Rodenberg and additionally in view of Golden as applied to claim 16. Final Act. 11 and 16. These claims depend from independent claim 8. Claims Appendix at Appeal Br. 21–22. Because we reversed the rejection with respect to claim 8, and the Examiner does not rely upon Rodenberg or Golden to cure the deficiencies identified above with regard to Durling (*see supra* p. 5–6), we do not sustain the Examiner's rejection of claims 9, 10, 12, 13, and 16.

Rejection E — Obviousness (claims 17 and 18)

The Examiner rejects claim 17 as obvious over Durling, Rodenberg and in view of Ehlers. Final Act. 17. Claim 17 is similar to claim 1 but additionally requires "an input device for inputting information about the one or more energy consuming devices within the building by the user" and "a display for displaying the energy usage pattern to the user." Claims Appendix at Appeal Br. 22–23. The Examiner again reasons that "[i]n order to pre-program this information this information [would] have to be pre-programmed by an [sic] user. Therefore to enter/pre-program this information by a user would have been obvious." Final Act. 20. The Examiner also notes that Durling does not teach a display; but, "Rodenberg teaches a system and method for monitoring energy usage and displaying electrical power consumption and cost at the consumer's residence or business (see page 1, paragraph [0002]) using a Receiving Display Unit (see page 1, paragraph [0006])." *Id.* at 21. According to the Examiner, it would have been obvious to modify Durling to include a display "for the benefit of

enhancing the system [by] providing the user with a means for watching their energy consumption." *Id.*

Appellants maintain similar positions addressed above for independent claim 1. Appeal Br. 18–19; Reply Br. 8–11. Moreover, Appellants contend that the additionally cited references, Rodenberg and Ehlers, do not overcome the deficiencies of primary reference Durling discussed above. Appeal Br. 18–19.

For the reasons discussed above for claim 1, we are unpersuaded by Appellants' arguments.

Appellants, for the first time in reply, additionally argue (1) that a user data input of Rodenberg "serves no purpose in Durling and thus there is no motivation for the proposed combination" and (2) "[t]he building user inputs [of Ehlers] identified by the Examiner appear to be a thermostat setting and possibly a preferred humidity, neither of which is information recited in claim 17." Reply Br. 10. Appellants have not explained, nor is it apparent, that these arguments were necessitated by the Examiner's Answer or could not have been presented in the principal brief. Therefore, these arguments are untimely and we will not reach arguments presented for the first time in a reply brief in the absence of good cause. 37 C.F.R. §41.41(b)(2).

Therefore, for the reasons discussed above, we sustain the Examiner's rejection.

CONCLUSION

The Examiner *reversibly erred* in rejecting claims 8, 11, 14, and 15 under 35 U.S.C. §102(e) as being anticipated by Durling.

The Examiner *reversibly erred* in rejecting claims 9, 10, 12, 13 and 16 under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Rodenberg and Golden (as applied to claim 16).

The Examiner did not reversibly err in rejecting claims 1, 4, and 6 under 35 U.S.C. §103(a) as being unpatentable over Durling.

The Examiner did not reversibly err in rejecting claims 2, 3, and 5 under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Rodenberg.

The Examiner did not reversibly err in rejecting claim 7 under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Golden.

The Examiner did not reversibly err in rejecting claims 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Durling in view of Rodenberg and in further view of Ehlers.

DECISION

For the above reasons, the Examiner's rejection of claims 8–16 is reversed and the Examiner's rejection of claims 1–7, 17, and 18 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED-IN-PART